

SILICON GULCH GAZETTE 19 JUN 25

18a

Computer Faire, 333 Swett Road, Woodside CA 94062

(415) 851-7075

5th COMPUTER FAIRE ISSUES CALL FOR PARTICIPATION

The 5th West Coast Computer Faire has been scheduled for March 14-16, 1980. It will again be held in San Francisco's Civic Auditorium & Brooks Hall, the largest convention facilities in northern California.

As with the previous four Computer Faires, the 5th Faire will include a major conference program.

The Conference Program is expected to include everything from tutorial talks for novices through state-of-the-art technical talks for experts. It will include both solo talks and panel presentations.

Everyone interested in participating in the Conference should request a Speaker's Kit, as soon as possible.

Those wishing to propose a talk or speak on a panel should plan on submitting a full-text paper — or at least a lengthy abstract — of their proposed presentation. *This must be submitted in camera-ready form on master sheets furnished by the Faire, and must be received no later than NOVEMBER 30th.*

For Speaker's Kits and further information, call or write to:

Computer Faire
333 Swett Road
Woodside, CA 94062
(415)851-7075

Proceedings:

FORTH LANGUAGE

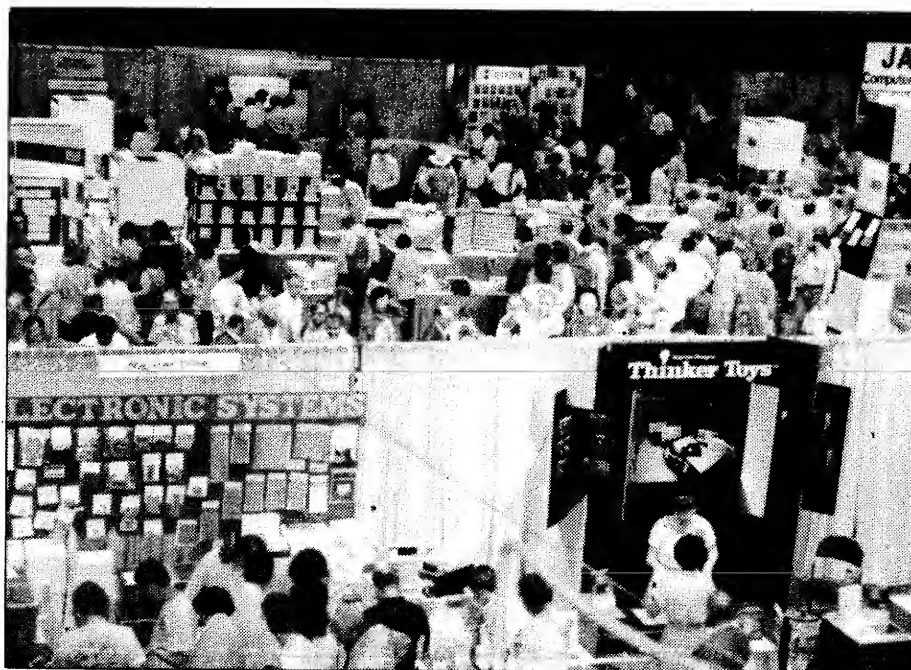
A language currently attracting a lot of attention is Forth, which offers a clean, self-extending mode of expression combined with efficient, compact compiled code. The papers in the section "Systems Software: Forth" describe this language.

An introduction to the language is given in "Introduction to Forth," by David Boulton. "Extensibility with Forth," by Kim Harris, provides more information on the language's self-extending properties.

An international effort at standardizing the language is described in "The Forth International Standards Team," by John James.

Two particular implementations of Forth are set out in "Forth Multitasking in Urth," by Lawrence Forsley, and "ARPS: A Forth Extension for Process Control," by W. Andrew Wright.

A more general implementation of Forth, which proceeded on several machines at once, is recounted in "Forth Implementation — A Team Approach," by William Ragsdale.



4th West Coast Computer Faire held in San Francisco

Proceedings:

HOME ENERGY MANAGEMENT

Environmental control for dwellings is an area in which computer technology is still in its infancy; however, rising costs of construction and of energy are likely to make it important in the future. Several papers in the section "Microcomputers, Energy Management and Environment" discuss this topic.

Several papers are concerned with the design of new computer-controlled dwellings. These include "Microcomputer Based Solar Simulator and Demonstrating Unit," by J. Robin Donaldson and Mark Miller, which describes a computer simulation of the thermal behaviour of a solar-heated dwelling, and "Dwellings . . . Redesigning Them to Support Life," by Dan Vance Kimball, which discusses the rethinking of architecture necessary to accommodate efficient computer control.

"Calor: A Microcomputer Simulation of Building Thermal Performance," by Thomas Tollefsen, describes a computer simulation of thermal behavior that includes solar heating, cooling by radiation, and heating by occupants. Use of the computer permits more refined techniques and more accurate results than were previously possible.

"A Real-Time Operating System that Specializes in Home Energy Management," by Fran Ferrand, proposes an operating system that could run on any standard microcomputer, and could control home energy use.

"Microcomputers in Energy Management Systems," by Mark Miller, documents a microcomputer-based system which has been incorporated into several renovations of existing housing.

Environmental control requires a change in habits, as well as habitats: "Overview of Energy Conservation Possibilities Using Home Computers," by Jack Park, considers this topic. The paper suggests ways in which computers can make people more aware of their energy consumption habits, and can help them improve those habits.

"Electrical Load Management," by A.I. Halsema, surveys the need for a more efficient use of electricity in the home and the potential of microcomputers for meeting that need.

Faire Conference Proceedings Has Over 410 Pages of Reference Papers

The Best of the Computer Faires, Volume IV — Conference Proceedings of the 4th West Coast Computer Faire, is a 411-page, soft-bound, 8½"x11" reference book containing all of the papers that were submitted, backing up the tutorials and technical talks that were given at the 4th Faire in the middle of May, 1979.

Held in San Francisco's Civic Auditorium & Brooks Hall, the 4th Faire drew over 14,000 attendees and included a Conference Program of around 100 speakers. The Proceedings is the unique reference work that resulted from that Conference.

This issue of the Computer Faire's Silicon Gulch Gazette contains descriptions of most of the major sections of those Proceedings.

Proceedings:

SMALL BUSINESSES

Probably the most widespread practical application of small computers is in data processing for small businesses. The section, "Inexpensive Business Computing," discusses this.

Several papers address the problem of choosing computers and software for small-business data processing. These include "Selecting General Accounting Software," by Chuck Bradley, and "Evaluating Business Software," by Greg Scott.

The more general problem of how to develop reliable, usable, and economical software is discussed in "Software for the Business Professional: A Growing Dilemma," by Dr. William Schenker. Past efforts in this area are reviewed in "Historical Development of Business Software," by Irwin Taranto.

A particular application common to every business that has employees is demystified in "W-2's the Easy Way," by Jere McEvilly of the Social Security Administration.

A more novel application, potentially widely useful, is described in "A Simulation of Proposed Strategies," by Dr. David Chereb. Simulations can be run on a small computer to predict the effects that various business strategies may have on a company's fortunes.

Some problems of the small-computer business itself are discussed in "Computer Store Illusions in the Business Market," by Richard Lawrence. This paper describes some of the shortcomings of present-day computer stores as perceived by their small-business customers, and what can be done to correct them.

Proceedings:

Communication Systems

The section, "Computer Communications for Human Communication: An Overview," contains two papers on ways in which computers can improve interpersonal communications.

"Personal Computer Telecommunications — An Overview," by Dave Caulkins, reviews the technology, advantages, and disadvantages of several personal computer communications nets that have been implemented or proposed. It also suggests some possible social effects of such systems, and gives a bibliography of work on small-computer telecommunications nets.

"Economic Advantages of Electronic Publishing," by William Bates, outlines the ways in which digital communications can be used to create an information utility that can partially replace book/newspaper publishing. The paper also discusses several electronic publishing systems that have already been implemented.

Proceedings:

DIGITAL BROADCASTING INFO

The section "Computer Communications for Human Communication: Digital Broadcasting," addresses digital transmission of information to the general public. Such transmissions, broadcast by radio or television signals, or "narrowcast" by telephone, promise computerized information utilities as widespread as telephones and television are today.

Several papers in this section describe specific digital broadcasting systems that are either proposed or in operation. "Videotext and Teletex Systems: Consumer Information Systems of the 80's," by A. Terrence Easton, discusses the characteristics and implications of consumer digital information systems, with special attention to the systems that are now in commercial operation in Europe.

"Subsidiary Communications Authority (SCA) Receivers and An Analysis of Some Receiver Problems," by Edison Schow, discusses some of the design problems with SCA receivers, including those proposed for the Digicast™ project.

Jim Warren's "The Digicast Project" describes a system, now being developed, which transmits information on an FM

signal without disturbing the signal's main (audio) component. The information can be picked up and processed by a special FM receiver connected to a small computer. The computer allows each user to perform powerful information processing operations, such as searching every item transmitted for keywords of interest. Digital broadcasting service has yet to be designed, as does digital broadcasting hardware and software. How will digital broadcasting look to a user, and what will he be able to use it for?

"S-O-S to MOS: A Proposal for Computer-Oriented Mass Communications," by Eric Somers, describes five characteristics which the author feels a successful public information utility must have. The paper also describes a new information utility design based on these characteristics.

"Digicast Broadcasting of the Weather," by Dennis Baker, suggests some of the benefits that could result from digital broadcasting of weather reports, e.g., "smart" receivers would pick up only the information that a particular user is interested in.



Proceedings:

COMPUTERS AND EDUCATION

The low cost of modern hardware is helping computers fulfill their promise in education, where progress has often been constrained by limited budgets. Papers in the section, "Low-Cost Educational Computing," describe some of the applications.

In "Pep Talk for Educators," Robert Jaquiss raises some basic questions about the 'what' and 'why' of computers in education: what does 'computer' mean to the teacher and the student? And, what must a computer be able to do to be useful? Jaquiss, a high school teacher, and a co-chairman of an Association for Computing Machinery study group, describes how this committee is dealing with these questions.

In "Computer Literacy in the Schools: A National Strategy," Arthur Luehrmann reviews the progress in familiarizing a large proportion of the students with computer use, and the directions and goals which future efforts should take and aim for. More ideas are offered in "Computer Literacy: It's Not Just For Kids Any More!", by Mrs. Bobby Goodson.

"Adding Low-Cost Audio to Your Micro for CAI," by Dr. Edward Crossman, explains how a computer-aided instruction (CAI) system can be given a low-cost audio response capability.

"Networking With Several TRS-80's in Schools," by Melvin Zeddies, describes a homebrew 'computer network' which permits several TRS-80 computers to share one set of peripherals.

Software, as well as hardware, is discussed in this section. "The PET-pilot Project," by David Gomberg and Martin Kamp, describes a full standard implementation of Pilot (a programming language often used for computer-aided instruction) on the Commodore PET.

On the topic of hardware and software selection, "The Golden Egg's Hardware and Software in Our Schools," by David Stone, explains how to define requirements and how to choose products for a small education-oriented computing system. Once the hardware and software have been selected, "Getting

CONSUL: In American politics, a person who having failed to secure an office from the people is given one by the Administration on condition that he leave the country.

Ambrose Bierce

Started," by Flora Russ, tells how to justify and to obtain the money to buy what is needed.

Computer use is not limited to the sciences. In "Voice Synthesis for Early Elementary Computer-Assisted Instruction," M. William Dunklau describes a language-arts program in the Dallas school system, which helps Hispanic students strengthen their English-speaking skills.

Small computers are gaining favor in college instruction as well as in primary and secondary schools. "Microcomputers in the Mathematics Classroom," by Christopher Morgan and Marvin Winzenread, explains several application programs the authors have developed and used at California State University, at Hayward. "Use of a Personal Computer in the Teaching of Physics at the College Level," by Leroy Kerth, describes similar kinds of programs developed by a physics professor. "A Small Computer as an Aid to Physics Lectures," by Loren Wright, shows how a computer can be used as a teaching aid to manage demonstrations and to produce a quick display of their results in class.

"The Computer and the College Student," by Christopher Espinosa, describes what it's like to live with a computer in a college dormitory.

Education also takes place outside of school. In "Learning to Live with Computers," David and Annie Fox offer their experience in creating the Marin Computer Center, an educational corporation, the goal of which is to familiarize all sorts of people with computers, "allowing them to experience power and self-respect in relation to machines."

Proceedings:

MUSIC AND MICROS

Science and art meet (or interface) in computer music, in an unusual way. Papers in the section, "Musical Computing," are concerned with this encounter.

"Learn to Play an Orchestra," by Caesar Castro and Allen Heaberlin, describes a new high-performance digital music synthesizer that can be built for less than \$800.

"Computer-Controlled Percussion Music," by Jerry L. Pfister, describes a computer-controlled system for simulating percussion instruments.



Proceedings:

MISC. APPLICATIONS

The section, "Microcomputer Applications," contains a variety of papers on unusual uses of computers.

"Of Microcomputers and Architecture," by Thomas Tollefsen, gives a preview of how small computers can revolutionize the practice of architecture, eliminating much of the drudgery and delay in design, experimentation, and administration of projects.

"Solving Dissection Puzzles by Computer," by David Collison, describes computer solutions for an interesting class of mathematical problems which have been little investigated in the past.

"A New Fitting Method and Its Application," by Dr. Endre Simonyi, presents a new curve-fitting algorithm which has been implemented on a small computer.

"Low-Cost Simulations of VOR and ILS Radionavigation Systems," by Robert Huenemann, describes a computer simulation of aircraft navigation systems which has been used to test ideas for improving real systems without having to build prototypes.

Proceedings:

MICROPERIPHERALS

The section, "Micro Peripherals" considers several aspects of information input and output with respect to microcomputers.

"The Microcomputer Peripheral The Unlimited Horizon," by Jeffrey McKeever, reviews the history and characteristics of various peripherals, and suggests the direction in which the technology is going.

"A Low Cost Digital System Interface to a Color Television Set," by Tim Ahrens and Jack Browne, Jr., discusses new integrated circuits from Motorola which can be used to interface a color television as a display unit for a small computer, arcade game, or other electronic device.

"Auxiliary Processor for S-100," by Allen Heaberlin, describes a general-purpose processor which attaches to an S-100 bus and behaves as a peripheral from the main processor's viewpoint, providing a cheap and clean way of adding computing power to an existing system.

Too much of a good thing is WONDERFUL.

—Mae West

Proceedings:

COMPUTERS AND OUR SOCIETY

Computer technology affects our society in many ways, and the spread of cheap computing power will further multiply its impact. "The Effect of Computing on Society" includes papers that explore the social impact of computers from a variety of viewpoints.

Computers may change the way we work, shop, and participate in public affairs. "Telecommuting Via the Personal Computer," by Jack Nilles, discusses the possibility that computers and communications will enable a large part of America's work force to work from their homes instead of commuting to offices. Effects on productivity, energy costs, and development of new service industries are studied, as well as new work habits and social patterns.

"Digital Broadcasting and the Democratic Process," by David Stodolsky, explores the prospects for using computers to make democratic institutions more effective both by increasing public access to information, and by making decision-making processes easier to participate in.

In "Computer Crime - Career of the Future?," Jay Becker, a deputy district attorney in Los Angeles, studies the problem of crimes committed thru or against computers, such as embezzlement, espionage, and theft of services. He facetiously suggests several reasons why computer crime makes an attractive (and profitable) career, and then reviews some measures that computer

managers and law enforcement agencies can take to make that career a less attractive one.

"Programmer Drift: Symptoms, Causes, and Cures," by Peter Zoll, studies a common problem in the computer industry - the tendency of programmers to move frequently from one job to another. Zoll suggests several measures that employers can take to reduce this drift.

Computers will not simply change the way we live; they will also give us new tools for dealing with our social environment. "The Personal Computer as a Social Tool," by Tony Severa, describes "The Connection Project," an effort to use a microcomputer to restore the sense of community and co-operation to towns and neighborhoods that have been fragmented by the high mobility of their residents.

"Can a Corporation Be Successful If It Operates With No Profit?" David Wortendyke's paper asks. The answer is "yes," asserts Wortendyke, president of Youth Educational Systems, Inc., (Y.E.S.). Y.E.S. is a non-profit corporation the purpose of which is to develop computer systems that can be advantageously used by other non-profit organizations. The paper reviews Y.E.S.'s activities to date, and its plans for the future.

Be the first computer kid on your block to have his or her very own copy of the *Best of the Computer Faires, Volume IV* (the Conference Proceedings of the 4th West Coast Computer Faire, held in San Francisco, May, 1979).

Proceedings:

Two-Way Digital Information Technology

The section entitled "Computer Communications for Human Communication: Bidirectional" addresses possibilities for two-way digital information utilities aided by computers.

Two papers study the design of bidirectional utilities and the ways they may be used. "Closing the Loop on One-Way Broadcast Systems," by John Pickens and Raphael Rom, discusses the prospect of combining electronic mail and digital broadcasting. The paper describes several possible configurations such a system could have, and their information-handling and economic properties.

"The Application of Two-Way Communication Technology to Information and News Systems," by Thomas Hill, discusses the forms that news distribution might take in an interactive digital information medium, and the effects the medium would have on news coverage, reporting style, and readers' habits.

"Project Green Thumb," by David Wortendyke, describes a project, sponsored by the U.S. Department of Agriculture and the National Weather Service which brings agricultural information to farmers by telephone. On request, a microprocessor collects the information and displays it on a television screen.

Digital communications of any sort require a means of encoding digital information for transmission. This topic is addressed by two papers, "A Look at Telecommunications from the Terminal User's Viewpoint," by Jim Jordan, and "Bit-Oriented Protocols in Serial Data Communications," by Mitch Gooze.

Request your free subscription to the Computer Faire's *Silicon Gulch Gazette*. Write to the Faire or call (415)851-7075.



Proceedings: Medical Applications

One of the most directly useful applications for small computers is in medicine, i.e., helping physicians treat the sick, and helping handicapped people live more fully and self-sufficiently. The section "Personal Computing for Physicians and the Physically Impaired," deals with this topic.

Two papers by Yvonne Russell and Susan Phillips describe the authors' work in applying computers to aid the handicapped. "Employment Applications of Computer Related Sensory Aids for Blind and Partially Sighted Persons" surveys devices that help blind people cope with jobs and become self-supporting. "Applications of TIM-II for Employment of Blind People" explains a computer output device which enables the blind to be employed in computer-related positions by 'reading' computer output to them in spelled-out form.

"A Computerized Physical Examination for Use In a Physician's Office," by Drs. Leo and Freny Berkenbile, presents an interactive program, suitable for small business computers, which guides a physician through a standard physical examination and records the results.

"Detailed Medical Billing," by Dr. Andrew Bender, describes a generalized system for automating a physician's billing procedures.

Proceedings: Computers for People

The section, "Designing Computers for Humans," discusses how to make computers both useful for, and hospitable to, their users.

"The Golemic Approach," by Lee Felsenstein, introduces an alternative to robotics: golemics, in which a human operator functions as an integral part of an automatic (computerized) control system. The operator brings to the system human abilities, such as judgment and intuition, which are difficult or impossible to program.

"An Intelligent Interactive User's Assistant," by William Faught, describes a new software tool developed at the Rand Corporation. The User's Assistant acts as a filter between an interactive computer system and a user's terminal. It 'understands' what the computer and user are saying to one another, and can help the user by telling him what the computer wants, what it is doing, or what results a proposed action would have.

"Ten Rules for Writing User-Oriented Programs," by Dave Ahl, publisher of *Creative Computing*, sets out guidelines for writing programs that are 'friendly' to users at all experience levels.

Proceedings: AMATEUR RADIO

Amateur radio operations seems a natural application area for small computers, since it is technical and innovative, and its practitioners are already electronics oriented. Two papers in the section, "Amateur Radio and Microcomputing," deal with the topic.

"A Slow Scan Television System Using a Microcomputer," By Clayton Abrams, describes a computer-based system which enables amateur radio operators to transmit slow-scan (narrow-bandwidth) television signals with greater quality and at lower cost than was possible before.

"Enhancing Amateur Radio Through Computer Control," by Leonard Silvern, discusses a computer-based information management system which reduces the record-keeping burden FCC rules place on amateur radio operators, and which enriches the content of radio contacts by making more information available to the operator as a basis for conversation.

